

**Commonwealth of Kentucky  
Division for Air Quality**

***PERMIT STATEMENT OF BASIS***

FEDERALLY ENFORCEABLE CONDITIONAL MAJOR DRAFT PERMIT

No. F-06-028

TEXAS GAS TRANSMISSION, LLC – HANSON COMPRESSOR STATION

MADISONVILLE, KY

JULY 20, 2006

CAROLINA ALONSO, REVIEWER

SOURCE I.D. #: 21-107-00154

SOURCE A.I. #: 44341

ACTIVITY #: APE20060001

**SOURCE DESCRIPTION:**

Texas Gas Transmission, LLC is the owner and the operator of the Hanson Compressor Station, which is currently a minor source pursuant to 401 KAR 52:020, Title V permits.

Texas Gas is proposing to replace two reciprocating compressor engines (RC03 & RC04) and the glycol dehydration system (GD02). The new compressor engines have a rated capacity of 1,775 bhp each, they operate on a 4-stroke compression cycle, and are equipped with state-of-the-art controls for Nitrogen Oxides (NO<sub>x</sub>). The new glycol dehydration system is design to dry up to 150 MMscf of natural gas per day and emissions of Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAPs) will be reduced by a Thermal Oxidizer. The project also includes the replacement of the emergency generator and the installation of a new boiler.

The proposed project will cause potential emissions for HAPs (Formaldehyde, Benzene, Toluene, and Xylenes) to be above the major source threshold. The source has elected to accept federally-enforceable operating limits in order to stay below major source thresholds under the Title V program.

**COMMENTS:**

Type of control and efficiency:

Type: Thermal Oxidizer (for EP GD02, glycol dehydration system)

Model: TO410

Manufacturer: ETI

Installation Date: 2007

A Thermal Oxidizer with a control efficiency of 95% will be installed and used to control emissions of VOCs and HAPs from the glycol dehydration system (GD02). In order to preclude applicability of 401 KAR 52:020, Title V permits, the Thermal Oxidizer (OX02) shall be in operation at all times the glycol dehydration system is in operation.

Emission factors and their source:

Emission factors are mainly estimated from the manufacturer's data and from AP-42. Emission factors for the glycol dehydration system (GD02) are estimated after calculating emissions with the Gas Research Institute's GRI-GLY Calc software.

Applicable regulations:

401 KAR 63:020, *Potentially hazardous matter or toxic substances*, applies to each process unit which emits or may emit potentially hazardous matter or toxic substances.

Anything unusual about the:

1. RC03 & RC04: Two 4-Cycle Lean Burn Natural Gas Fired Reciprocating Compressors

Non-applicable Regulations

40 CFR Part 63, Subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), applies to stationary RICE that are located at major sources of HAPs. This facility has accepted limits in order to be below the major HAP source thresholds and therefore this regulation does not apply.

2. GD02: Glycol Dehydration System

Non-applicable Regulations

401 KAR 63:002, (40 CFR Part 63, Subpart HHH), National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities, applies to glycol dehydration units operated by natural gas transmission and storage facilities which are major sources of HAPs based on maximum natural gas throughput and meet the applicability requirements defined in 40 CFR 63.1270 of Subpart HHH. This facility has accepted limits in order to be below the major HAP source thresholds and therefore this regulation does not apply.

**EMISSION AND OPERATING CAPS DESCRIPTION:**

Texas Gas has accepted limits to preclude the applicability 401 KAR 52:020, Title V permits. The operating and emission limits are as follows:

Emission Point	Pollutant	Operating limit	Emission limit
RC03 & RC04	Formaldehyde (HAP)	11,500 total operating hours per year	-
GD02	Benzene, Toluene, and Xylenes (HAPs)	Thermal Oxidizer shall be operating at all times GD02 is in operation.	-
Source wide	VOC	-	90 ton per year
	Single HAP	-	9 ton per year
	Combined HAPs	-	22.5 ton per year

The restriction in operating hours per year on the new compressor engines (RC03 & RC04) is necessary to limit the formaldehyde potential emissions from the facility to less than 10 tons per year for a single HAP and maintain the facility as a minor HAP source.

The operating limit on the new glycol dehydration system (GD02) is necessary to limit the Benzene, Toluene, and Xylenes potential emissions from the facility to less than 10 tons per year for a single HAP and less than 25 tons per year of combined HAPs, so the facility can be maintained as a minor HAP source.

The source wide emission limits are necessary to ensure the facility will not go over the Title V major source thresholds.

**CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.